

# Notice of Allowability

Application No.

10/557,829

Examiner

Dixomara Vargas

Applicant(s)

NI ET AL.

Art Unit

2859

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 07/24/07.
2. ☒ The allowed claim(s) is/are 13-30.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steven H. Noll on 08/28/07.

The application has been amended as follows:

In claim 21, line 12, after "and" insert -- said space has a center point, said static magnetic field source, at each of said opposite faces, comprises a plurality of groups of permanently magnetic columns respectively having different magnetic energy levels, said columns being disposed substantially symmetrically relative to an axis proceeding through said center point and a centered one of said plurality of magnetic columns in each of said first and second assemblies, with the respective magnetic energy levels of said centered ones of said plurality of magnetic columns respectively in said first and second assemblies being equal. --

### ***Allowable Subject Matter***

2. The following is an examiner's statement of reasons for allowance:
  - a. With respect to claim 13, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest a magnetic resonance

imaging apparatus comprising a first passive shimming ring disposed at the annular exterior of said gradient coils, and a passive second shimming ring disposed at said annular exterior of said gradient coils adjacent to said first shimming ring; and said second shimming ring in each of said first and second assemblies being mounted to allow adjustment of a distance of said second shimming ring from the first shimming ring in that assembly in combination with the remaining limitations of the claim.

a. With respect to claim 21, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest a magnetic resonance imaging apparatus comprising a plurality of groups of permanently magnetic columns respectively having different magnetic energy levels, said columns being disposed substantially symmetrically relative to an axis proceeding through said center point and a centered one of said plurality of magnetic columns in each of said first and second assemblies, with the respective magnetic energy levels of said centered ones of said plurality of magnetic columns respectively in said first and second assemblies being equal in combination with the remaining limitations of the claim.

b. With respect to claim 26, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest a method for shimming a static magnetic field in a magnetic resonance imaging apparatus, said apparatus comprising a static magnetic field source having two opposite faces connected by a magnetic return structure, said opposite faces facing each other and being separated by a space configured to receive an examination subject therein, first and second assemblies respectively mounted at said opposite faces, said first and second assemblies

each being comprised of a plurality of components with the components in said first assembly being disposed mirror-symmetrically, relative to a plane proceeding through said space, with respect to the components in the second assembly; said method comprising the steps of: in each of said first and second assemblies, including a passive second shimming ring disposed adjacent to said first shimming ring; and adjustably mounting said second shimming ring relative to said first shimming ring and selectively adjusting a distance between said second shimming ring and said first shimming ring to shim said static magnetic field in combination with the remaining limitations of the claim.

b. With respect to claim 28, the claim has been found allowable over the prior art of record because the prior art of record fails to teach or fairly suggest a method for shimming a static magnetic field in a magnetic resonance imaging apparatus, said apparatus comprising: a static magnetic field source having two opposite faces connected by a magnetic return structure, said opposite faces facing each other and being separated by a space adapted to receive an examination subject therein; said space having a center point, first and second assemblies respectively mounted at said opposite faces, said first and second assemblies each being comprised of a plurality of components with the components in said first assembly being disposed mirror symmetrically, relative to a plane proceeding through said space, with respect to the components in the second assembly; said method comprising the step of dividing each of said permanently magnetic arrangements into a plurality permanently magnetic columns respectively having different magnetic energy levels, and disposing the plurality of permanently

magnetic columns at each of said opposite faces symmetrically relative to an axis proceeding through said center point and oriented perpendicularly to said plane, and making the magnetic energy levels equal for respective permanently magnetic columns in combination with the remaining limitations of the claim.

c. With respect to claims 14-20, 22-25, 27 and 29-30, the claims have been found allowable due to its dependency on claims 13, 21, 26 and 28 above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dixomara Vargas whose telephone number is (571) 272-2252. The examiner can normally be reached on Monday to Thursday from 8:00 am. to 4:30 pm..

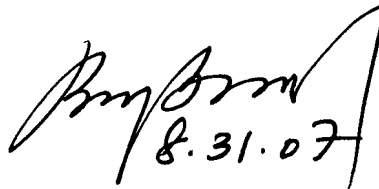
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Dixomara Vargas  
Patent Examiner  
Art Unit 2859



**BRIJ SHRIVASTAV**  
**PRIMARY EXAMINER**